Amendments to the Claims:

This listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

1. (Currently Amended) A method of generating executable program code for a data processing system, the method comprising:

~~-an encoding stage for~~ generating, by an encoding stage, a compressed intermediate representation ~~(E-IR)~~ of an input code ~~(IC)~~, the encoding stage ~~comprising:~~ further performing the steps of:

[[-]] transforming ~~(301)~~ the input code ~~including~~ and performing a selected set of code ~~optimisation~~ optimization steps resulting in transformed code ~~(302)~~ and compiler information ~~(303)~~ about the transformed code;

[[-]] extracting ~~(304,306)~~ state information ~~(305)~~ of a statistical model and statistical information ~~(PDF)~~ from the transformed code and the compiler information; [[and –]]

encoding ~~(307)~~ the transformed code and the compiler information using the extracted state information and statistical information and resulting in the compressed intermediate representation;

~~a decoding stage for~~ generating, by a decoding stage, the executable program code from the compressed intermediate representation, the decoding stage ~~comprising~~ further performing the steps of:

[[-]] decoding ~~(401)~~ the compressed intermediate representation resulting in the transformed code ~~(402)~~ and the compiler information ~~(403)~~; and

[[-]] further compiling ~~(407)~~ the transformed code using the decoded compiler information and resulting in the executable program code ~~(EXE)~~.

2. (Currently Amended) The ~~A~~ method according to claim 1, ~~characterised in that~~ wherein the encoding stage is performed on a first data processing system ~~(101)~~ and the decoding stage is performed on a second data processing system ~~(102)~~; the method further comprising the step of transferring the compressed intermediate representation from the first data processing system to the second data processing system.

3. (Currently Amended) The ~~A~~ method according to claim 1 ~~or 2~~, ~~characterised in that~~ wherein the step of generating the state information and statistical information further comprises [[-]] the steps of

obtaining state information ~~(305)~~ from a state machine ~~(304)~~ based on the transformed code and the compiler information; and

[[-]] obtaining probability information ~~(PDF)~~ from a statistical model ~~(306)~~ based on the obtained state information.

4. (Currently Amended) The ~~A~~ method according to claim 3, ~~characterised in that~~ wherein the state machine comprises a syntactic model of at least one of the transformed code and the compiler information.

5. (Currently Amended) The ~~A~~ method according to claim 3 ~~or 4,~~ ~~characterised in that~~ wherein the state machine comprises an execution model of the transformed code.

6. (Currently Amended) The ~~A~~ method according to claim 3 ~~any one of claims 3 through 5~~, ~~characterised in that~~ wherein the state machine comprises a model of the compiler information.

7. (Currently Amended) The ~~A~~ method according to claim 1 ~~any one of claims 1 through 6~~, ~~characterised in that~~ wherein the method further comprises the steps of:

[[-]] storing the compressed intermediate representation; and

[[-]] performing the decoding stage in connection with a subsequent execution of the generated executable program code.

8. (Currently Amended) The ~~A~~ method according to claim 1 ~~any one of claims 1 through 7~~, ~~characterised in that~~ wherein the step of further compiling the transformed code further comprises further ~~optimising~~ optimizing the resulting executable code.

9. (Currently Amended) The ~~A~~ method according to claim 1 ~~any one of claims 1 through 8,~~ ~~characterised in that~~ wherein the input code comprises Java bytecode.

10. (Currently Amended) The ~~A~~ method according to claim 1 ~~any one of claims 1 through 9~~, ~~characterised in that~~ wherein the data processing system is a mobile terminal.

11. (Currently Amended) The ~~A~~ method according to claim 1 ~~any one of claims 1 through 10~~, ~~characterised in that~~ wherein the transformed code comprises a number of code elements and the method further comprises the steps of:

determining a probability distribution of said code elements; and

providing the determined probability distribution to the step of generating statistical information.

12. (Currently Amended) A method of generating program code for a data processing system, the method comprising the steps of:

[[-]] transforming ~~(301)~~ an input code ~~(IC)~~ ~~including~~ further comprising performing a selected set of ~~optimisation~~ optimization steps resulting in transformed code ~~(302)~~ and compiler information ~~(303)~~ about the transformed code;

[[-]] extracting ~~(304,306)~~ state information ~~(305)~~ of a statistical model and statistical information ~~(PDF)~~ from the transformed code and the compiler information; [[and]]

[[-]] encoding ~~(307)~~ the transformed code and the compiler information using the extracted state information and statistical information and resulting in a compressed intermediate representation ~~(E-IR)~~ of the input code; and

decoding and further compiling the compressed intermediate representation ~~being adapted to be decoded and further compiled~~ in a subsequent decoding stage for generating executable program code.

13. (Currently Amended) A computer program ~~comprising program code means for~~ embodied on a computer readable medium operable to be loaded from the computer readable medium into a computer processor for performing all the steps of claim 12~~ when said program is run on a computer~~.

14. (Currently Amended) A method of generating executable program code in a data processing system, the method comprising the steps of:

[[-]] receiving a compressed intermediate representation ~~(E-IR)~~ of an input code, the compressed intermediate representation including encoded transformed code generated and at least partially ~~optimised~~ optimized by a compiler and encoded compiler information indicative of further information generated by the compiler about the transformed code, the encoded transformed code and the encoded compiler information being encoded using state information of a statistical model and statistical information extracted from the transformed code and the compiler information;

[[-]] decoding ~~(401)~~ the compressed intermediate representation resulting in the transformed code ~~(402)~~ and the compiler information ~~(403)~~; and

[[-]] further compiling ~~(407)~~ the transformed code using the decoded compiler information and resulting in the executable program code ~~(EXE)~~.

15. (Currently Amended) A computer program ~~comprising program code means for~~ embodied on a computer readable medium operable to be loaded from the computer readable medium into a computer processor for performing all the steps of claim 14~~ when said program is run on a computer~~.

16. (Currently Amended) A data processing system for generating executable program code, the system comprising:

an encoding module ~~adapted~~ operable to generate a compressed intermediate representation of an input code, the encoding module further comprising:

[[-]] first compiler means ~~adapted~~ operable to transform the input code ~~including performing~~ and perform a selected set of code ~~optimisation~~ optimization steps [[and]] resulting in transformed code and compiler information about the transformed code;

[[-]] processing means ~~adapted~~ operable to extract state information of a statistical model and statistical information from the transformed code and the compiler information; and

[[-]] encoding means ~~adapted~~ operable to encode the transformed code and the compiler information using the extracted state information and statistical information and resulting in the compressed intermediate representation;

a decoding module ~~adapted~~ operable to generate the executable program code from the compressed intermediate representation, the decoding module further comprising:

[[-]] decoding means ~~adapted~~ operable to decode the compressed intermediate representation resulting in the transformed code and the compiler information; and

[[-]] second compiler means ~~adapted~~ operable to further compile the transformed code using the decoded compiler information and resulting in the executable program code.

17. (Currently Amended) An encoding device for generating program code for a data processing system, the encoding device comprising:

[[-]] compiler means ~~adapted~~ operable to transform an input code ~~including performing~~ and perform a selected set of code ~~optimisation~~ optimization steps resulting in transformed code and compiler information about the transformed code;

[[-]] processing means ~~adapted~~ operable to extract state information of a statistical model and statistical information from the transformed code and the compiler information; and

[[-]] encoding means ~~adapted~~ operable to encode the transformed code and the compiler information using the extracted state information and statistical information and resulting in a compressed intermediate representation of the input code[[;]], the compressed intermediate representation being ~~adapted~~ operable to be decoded and further compiled in a subsequent decoding stage for generating executable program code.

18. (Currently Amended) A data processing system for generating executable program code, the data processing system comprising:

[[-]] receiving means ~~adapted~~ operable to receive a compressed intermediate representation of an input code, the compressed intermediate representation including encoded transformed code generated and at least partially ~~optimised~~ optimized by a compiler and encoded compiler information generated by the compiler indicative of further information generated by the compiler, the encoded transformed code and the encoded compiler information being encoded using state information of a statistical model and statistical information extracted from the transformed code and of the compiler information;

[[-]] decoding means ~~adapted~~ operable to decode the compressed intermediate representation resulting in the transformed code and the compiler information; and

[[-]] compiler means ~~adapted~~ operable to further compile the transformed code using the decoded compiler information and resulting in the executable program code.

19. (Currently Amended) A data record embodied on a computer readable medium comprising:

a compressed intermediate representation of an input code, the compressed intermediate representation including encoded transformed code generated and at least partially ~~optimised~~ optimized by a compiler and encoded compiler information indicative of further information generated by the compiler, the encoded transformed code and the encoded compiler information being encoded using state information of a statistical model and statistical information extracted from the transformed code and from the compiler information;

the compressed intermediate representation being ~~adapted to be~~ decoded and further compiled by a data processing system resulting in executable program code embodied on a computer readable medium loaded and processed by a processor of the data processing system.